

## REMARKS

Upon entry of this amendment, claims 40, 41, 68, 69, 70, 89, 96-101 and 103 are pending. Claims 1-39, 42-67, 71-88, 90-95, and 102 have been canceled. Claims 40, 41, 68, 69, 70 and 89 have been amended to bring them into the elected group.

Claim 91 has been canceled in favor of claim 103. Claim 103 incorporates the suggestions made by the Office relative to claim 91 and was otherwise cosmetically modified to improve format and enhance antecedent references and hence, readability.

### Claim Objections

Reconsideration is requested of the Office's objection to claim 91. It is believed that claim 103 addresses or obviates each of the informalities raised by the Office.

### 35 USC 112, 2nd paragraph

Reconsideration is requested of the rejection of claim 91 under 35 USC 112, second paragraph, as being indefinite. Claim 103 specifies that the alloy powder be a platinum alloy powder.

### 35 USC 103

Reconsideration is requested of the rejection of claims 91 and 96-101 under 35 USC 103(a) as being unpatentable over Bocarsly et al., U.S. Patent No. 6,932,851.

Claim 103, which replaces claim 91, is directed to a combinatorial library of supported platinum alloy powders. The array comprises a plurality of supported platinum alloy powder members at spatially discrete regions of a common library substrate. Further, each of the plurality of supported platinum alloy powder members comprises a particulate support and deposits of a platinum alloy on the particulate support, wherein (a) the platinum alloy comprises a non-noble metal, (b) the loading of the deposits on the particulate support for each member is at least about 20 weight percent, (c) the average size of the deposits for each member is no greater than about 10 nm, (d) the deposits for each member have a size distribution wherein at least about 70 percent of the platinum alloy deposits are between about 50 and about 150 percent

of the average platinum alloy deposit size. In addition, the plurality of supported platinum alloy powder members differ from each other with respect to one or more characterizing features selected from the group consisting of: (i) chemical or physical properties of the particulate support; (ii) chemical or physical properties of the platinum alloy on the particulate support; (iii) the extent of loading of the deposits on the particulate support; and (iv) the average deposit size on the particulate support.

With all due respect, Bocarsley et al. disclose little, if any of this. To begin with, Bocarsly et al. disclose the preparation of *films* of metal alloy nanoparticles and not nanometer sized deposits on a particulate material. Bocarsly et al. also fail to disclose an array of a plurality of supported platinum alloy powder members wherein members differ from each other with respect to one or more characterizing features (specified by claim 103). Bocarsly et al. fail to disclose loading (requirement "b" of claim 103) and attach no particular significance to average particle sizes of 10 nm or less.

As described in applicant's specification, the array of claim 103 is particularly well-suited for use in conducting combinatorial research investigations, in particular with respect to electrocatalysts for fuel cells. Stated differently, the array of claim 103 is designed for use as a research tool and the requirements specified in the claim enable different compositions to be compared on a like basis. In contrast, Bocarsly et al. are merely concerned with methods for the synthesizing metal alloy nanoparticles. While this may be important, it does not provide a means or even propose the direct comparison of a plurality of members. Thus, the improvement is more than the predictable use of prior art elements according to their established functions.

Having failed to demonstrate that the elements specified by claim 103 can be found in Bocarsly et al. and thus having failed to establish a prima facie case of obviousness, the Office cannot maintain that the subject matter defined by claim 103 is merely the predictable use of prior art elements according to their established functions. The rejection of all pending claims in view of Bocarsly et al., therefore, may properly be withdrawn.

Reconsideration is requested of the rejection of claims 91 and 96-101 under 35 USC 103(a) as being unpatentable over Mao et al., U.S. Patent Publication No. 2003/0104936.

Mao et al. disclose the preparation of nanometer sized deposits (3 nm or less), with a typical standard deviation of particle size of 0.6 nm or less, and a loading of 30% or more. See, e.g., paragraph [0029]. Mao et al., however, fail to disclose an array of a plurality of supported platinum alloy powder members wherein members differ from each other with respect to one or more characterizing features (specified by claim 103). Mao et al. also fail to disclose an array of a plurality of supported platinum powders wherein each member of the array satisfies the requirements of elements "a" through "d" of claim 103.

As previously noted, the array of claim 103 is particularly well-suited for use in conducting combinatorial research investigations and, in particular, with respect to electrocatalysts for fuel cells, wherein different compositions may be compared on a like basis. In contrast, Mao et al. are merely concerned with methods for the preparation of supported catalysts comprising catalyst metal nanoparticles. While this may be important, it does not provide a means or even propose the direct comparison of a plurality of members. Thus, the improvement is more than the predictable use of prior art elements according to their established functions.

Having failed to demonstrate that the elements specified by claim 103 can be found in Mao et al. and thus having failed to establish a prima facie case of obviousness, the Office cannot maintain that the subject matter defined by claim 103 is merely the predictable use of prior art elements according to their established functions. The rejection of all pending claims in view of Mao et al., therefore, may properly be withdrawn.

CONCLUSION

In view of the foregoing, favorable reconsideration is requested of all pending claims.

The Commissioner is hereby authorized to charge any underpayment and credit any overpayment of government fees to Deposit Account No. 19-1345.

Respectfully submitted,



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